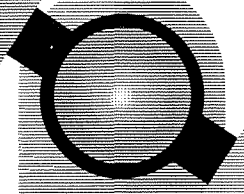
PROCEEDINGS

Of The Hawaii Windpower Workshop

March 21 and 22, 1994 Honolulu, Hawai'i



Final Report
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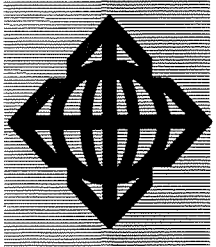

Preface

The Hawaii Windpower Workshop was sponsored by the U.S. Department of Energy (U.S.DOE) and the State of Hawaii Department of Business, Economic Development and Tourism (DBEDT).

The Pacific International Center for High Technology Research (PICHTR) organized and conducted the workshop in cooperation with U.S.DOE, the National Renewable Energy Laboratory (NREL), DBEDT and the Hawaiian Electric Company (HECO). Participants in the workshop included representatives from the Electric Power Research Institute (EPRI), the Hawaii Public Utilities Commission (HPUC), the Hawaiian utilities, the National Congress of State Legislators (NCSL), Hawaii State legislators, county governments, the American Wind Industry Association (AWEA), wind manufacturers and developers, the National Resource Defense Council (NRDC), the Union of Concerned Scientists (UCS), the Green Party, the Hawaii Consumer Advocate (CA), and private citizens.

The workshop was jointly funded by DBEDT and NREL. The manager of the workshop was Warren S. Bollmeier, II, manager of wind/solar/hybrid projects at PICHTR. Special thanks are extended to:

- Ron Loose at U.S. DOE, Sue Hock and Blair Swezey at NREL, Maurice Kaya at DBEDT, and Art Seki at HECO for their assistance in coordinating the agenda and providing overall guidance;
- Each of the panel chairs for their efforts in preparing and delivering excellent presentations;
- Each of the panelists for their participation and lively comments during comment and question and answer periods; and
- Nancy Downes, Leonard Greer, Carol Hill, Ning Huang, Linda Ome, Milton Staackman, and Lyn Tong for their efforts in the preparation and implementation of the workshop. Finally, a special mahalo to Nancy for her diligence in helping to prepare and edit the proceedings.

Abstract

On March 21 - 22, 1994, approximately 80 key government, utility, industry and private representatives met in Honolulu, Hawaii, to discuss and learn from each other how additional wind power might be added to the supply mix for the Hawaiian utilities. A key outcome of the workshop was the consensus that the use of wind power should be increased in Hawaii. This consensus was consistent in all of the panel discussions, throughout the entire workshop. Furthermore, it is significant that the discussions were sometimes lively, but not heated; informative and accurate, but not biased; and proactive, but not reactionary.

Despite the consensus on the objective of using more wind power, it is also recognized that not everyone agrees on its implementation. But, what is significant and different from past meetings and discussions, is that there is a willingness on the part of the participants to continue the discussion. This willingness supports and reinforces the overall recommendation to form a wind collaborative as the vehicle for establishing and maintaining a cooperative and collaborative approach to enhancing the use of wind power to meet the electrical energy needs of the people of Hawaii.

The discussions, broken down into three separate sessions with a total of 10 panels, ranged from technology and wind resource status, to project development and implementation issues, and stakeholder perspectives.

Wind Technology and Resource Status. There have been problems with the commercialization of wind power in Hawaii, but industry has learned from the mistakes made in wind turbine design and siting, not only in Hawaii, but on the mainland as well. Some Hawaii-specific issues remain, including design refinements to meet Hawaii's environmental conditions, integration of advanced wind turbine technology and storage to meet utility integration needs, higher permitting and construction costs relative to other areas, and consideration of landowner concerns, such as competing uses and visual impact. There was a strong consensus among the participants that all interested parties should work together to address the issues.

Project Development and Implementation Issues. It was also recognized that there has been significant insight gained in project development and implementation, and that further improvements are possible and desirable. The utility business is rapidly changing across the country, which has led to alternative ownership and operation arrangements. While most wind power has been developed by independent power producers, some utilities are now considering utility or joint ownership and operation arrangements. Government has supported the development of new wind technology and is now advancing initiatives to assist the industry's commercialization activities. Wind power offers attractive economic and environmental benefits including increased employment and reduced supply risks. Utility planning has become more complex and difficult given uncertainties in forecasting and traditional supply sources, and environmental concerns. Utilities, in Hawaii along with many across the mainland, are now implementing

integrated resource planning (IRP) as a means to address traditional planning needs, as well as environmental and other public concerns. The need for cooperation and collaboration in project development and in IRP again was viewed as a high priority.

Stakeholder Perspectives. The stakeholders are the organizations and individuals impacted by wind power development and, in the broader context, by IRP. To date, too much emphasis has been placed on substance rather than process in utility planning, both at the PUCs across the nation and in the IRP process itself. IRP is a relatively new process and is evolving. Improvements are desirable in terms of seeking and utilizing input from all stakeholders. To date, the previous players have been the utilities, the PUC, industry and environmental and community action groups. In general, the public appears to support the use of wind power, but struggles to assert its views in the IRP process. There is a need to reexamine the role of public input and how it can be effectively mobilized. Recently, there have been initiatives by PUCs and state legislatures to support wind power, as well as other renewables. Specific initiatives discussed included green pricing, green solicitations, utility incentives and "risk-adjusted-rates" for evaluation of life cycle costs for renewables. The most successful initiatives were those which had the support of the key stakeholders, including the utility, PUC, legislature, industry and the public.

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